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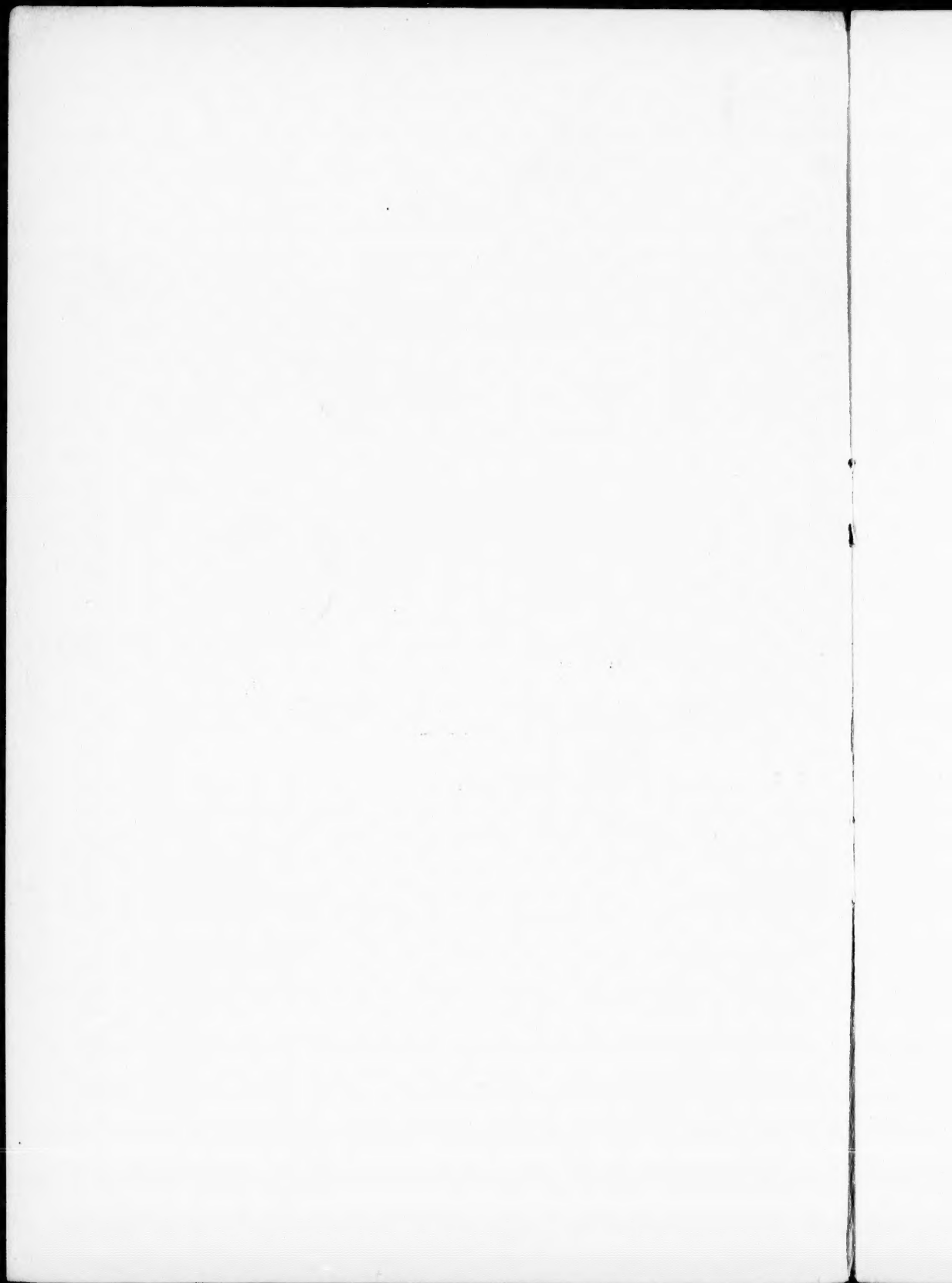
THE PLACE OF PHYSICAL TRAINING IN A SCHOOL SYSTEM.

BY

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The last twenty years have seen many great changes in our ideas of School Education in Canada, and among the most notable has been the endeavor to meet the new conditions of school life that have arisen, due to the rapid growth of our cities and towns.

This might not seem to have much direct bearing on school life, at first sight, but new series of problems arise as soon as many people have to live in a confined space, and that specialization or division of labor appears which is forced upon the dwellers in cities. Such questions as drainage, water supply, ventilation, fresh air and exercise then assume an importance that is almost incomprehensible to those whose lives are spent in the freedom and physical activity of country life, and it is little wonder that we find a certain hesitancy, to use a mild term, in attacking such questions, and that we are met so often by the remark, that has done duty so long and so often, that what was good enough for our fathers and ourselves is good enough for the present generation of children.

Our cities and towns are of such recent growth, that this attitude must be expected, but with a wise holding on to that which was good in former days there should always be linked broad liberality and alert aggressiveness in the meeting of these new questions which naturally did not appeal with the same force to the educationalists of fifty years ago.

We find, then, but few scattered notes on the subject of physical education in looking over Canadian School Journals and Reports of former years. The boisterous out-door games of the play ground, or the village common with its saw-dust ring, a relic of the travelling circus, the long tramp to and from school, the evening hours at the wood pile or the garden or harvest field made up the day's work to the great majority of children with Saturdays in the woods, on the river or in the swimming pool, and the open sky and the broad fields were the only limit of the gymnasium that had to counteract the effects of the hours of confinement to ill-ventilated and badly-heated buildings.

That these disease-producing conditions were the rule, I find strongly brought out by an essay on school buildings, happened on in looking over a Provincial School Report for the year 1878.

* Read before the Provincial Association of Protestant Teachers, Oct. 14th, 1890.

I quote from it a paragraph in the writer's own words. He says :—

"One might suppose from the shattered condition and ill-accommodation of many school-houses, that they were erected as pounds to confine unruly boys, to punish them by way of freezing them and smoking them, so that the master can do little more than regulate the ceremonies of the hearth."

Thanks to the march of Sanitary Science and improved methods of ventilation and heating this could not now be said with truth about very many of our school houses, although my own school days recall buildings that answered to the essayist's description in more than one particular.

The present day brings the city child under totally different conditions, his home is on a built-up street, his play ground is the sidewalk and the roadway with the luxury of an occasional vacant lot. The various duties of the house that fall to the country boy, "the chores," are abolished or done by servants. The wood comes to the house sawn and chopped or comes in the shape of coal. The telephone runs the messages—and even the policeman strives to suppress the outward evidences of the boy's animal spirits that may threaten to interfere with the peace of the community, however valuable their display may be to the boy, from a developmental standpoint.

The Y.M.C.A.'s are trying to supply this want of exercise by their boys' classes, and are doing good service, but should not this work be provided for in every well-organized system of school education?

The growth of the body must be completed in less than twenty-five years, and the years of most rapid growth are those of school life, between 8 and 17. It is in these years that the nervous system is trained to co-ordination, that the senses receive their strongest and most lasting impressions. It is in this time that the ossification of the bones goes on with greatest rapidity and that the muscles are trained to do the work that becomes automatic in the adult. This period takes the child through the changes of puberty when the body takes on the characteristics of manhood and womanhood.

At this period of life the greatest care must be exercised over the health lest the permanent stamp of disease, deformity or neglect be left on the grown man. The paramount questions must be those of good feeding, healthy surroundings and abundant bodily exercise, avoiding the dangers of overstrain, both physical and mental. Forcing and overwork in the growing child of 14 will certainly be visited upon the defective or enfeebled man of 40.

If physical training is neglected or deferred at this critical time its influence can never be replaced, no matter how hard we strive later on. The opportunity is gone beyond recall. Let us examine the conditions under which the child passes these years when the body like a cast is

hardening in the mould, acquiring the fixed form it is to have throughout life.

He sits, from 3 to 5 hours daily, on a seat more or less well-fitting, at a desk which is often too high or too low for his needs. This fixed position must be retained with but few intermissions.

In the natural condition a child, like all young animals, is in constant motion, and any prolonged fixity of position causes fatigue out of all proportion to the cause, as it appears to the grown man. This vital necessity for almost constant movement, is part of the process by which he grows, and anything that interferes with it, interferes with his complete growth and development.

Hence we find that the weaker ligaments and growing, plastic bones soon tire under the strain, the back curves forward, the shoulders round and the condition of "skewed back" is seen with flattening of the chest and cramping of the thorax.

If kept standing still for long periods of time the chest sinks, the abdomen protrudes, the chin drops forward and the weight is transferred from one leg to the other until the habit of resting on one becomes confirmed and a resultant lowering of one shoulder and distortion of the figure takes place. Not less profound though more difficult of measurement is the influence of this cramping on the heart, lungs and nervous system, and general health of pupils.

That a complete system of physical training can greatly improve this condition of school life will be generally admitted, and the constant strain of discipline caused by the attempt to keep children quiet and orderly should be greatly relieved by enough periodical exercise to engross that restless energy, which in the normal child is an index of his vitality.

The question is rather to outline a system of training suited to our conditions that would get the best results if generally applied in our public and high schools.

Such a system would be somewhat upon the following lines. At the end of every quarter of an hour's work at the desk, about 5 minutes should be devoted to free extension movements in the schoolroom with windows opened for ventilation when possible.

These movements should be designed to relieve the muscles and ligaments that have been on the strain and to correct the collapsed posture that results from the fatigue of sitting still.

Once a day there should be a change of clothing and at least half an hour's brisk exercise, hard enough to produce free perspiration, bringing into vigorous action the heart, lungs and skin, for no exercise has reached its maximum of good until this has been attained; this should

be followed by a tepid bath to cleanse the skin or even a cold bath if the child stands it well.

A large and well-ventilated hall should be used for this purpose, or in fine weather the open air.

In addition to this routine, out-door games should be encouraged in their season and made systematic for all who are able to take part in them. There will always be some whose physique or condition of health debars them from such rough games as football or hockey, but most of whom could take light exercise with great benefit. In other pupils special care is demanded requiring exercises that vary with the particular case, for the danger of overstrain and injury may be greatly increased by the kind of exercise employed.

For all such provision should be made that the pupil may graduate in better condition than when he entered instead of reversing the process.

At the very outset four questions must be settled before such a course can become part of the school system. They are time, teaching, equipment and medical supervision.

I. Where is the time ?

In all our schools and colleges there is a constant struggle for time to outflank the host of subjects that threaten to overwhelm both pupil and teacher alike, and the introduction of any new subject is not likely to be received with acclaim by teachers who look upon it as another demand on their already overtaxed energies.

II. How are teachers to be trained sufficiently in physical work to be able to give the exercises in the school room and how can we provide for a special teacher of gymnastics to conduct the regular work ?

III. How are we to provide a large well-ventilated room in which we could be sure of light and heat and the ordinary equipment of apparatus that goes with a modern well-regulated gymnasium, with dressing-rooms and lockers attached and with good hot and cold tub and shower baths, and if possible a swimming tank, for it is not to be forgotten that swimming is one of the best exercises we have for all-round development and is besides an accomplishment with which every person, male and female, should be familiar.

The ever present objection "Expense" comes up, but it is not fair in facing this question to say at once, because we cannot reach a certain standard of excellence forthwith, that therefore the standard is not worth striving for.

IV. What should be the proper extent and uses of medical supervision in the physical training of school children ?

There are always, in a class a certain number of pupils who are not up to the normal physically, and in allowing them to take part in severe exercise irreparable damage might be done which might impair their

usefulness or shorten their lives. Hence the necessity of having some medical supervision wherever exercise is used, that the instructor may know when certain pupils require to be treated with care or excused from any but the lightest forms of physical exercise.

The time occupied by exercise is so well employed that its introduction into the school curriculum should need no defense, and the hour in the gymnasium, preferably after the school work is over, should be the most attractive part of the day to the average boy or girl.

The training of the teachers would have to be done at the Normal schools, and a course could be taken there sufficient for the giving of such simple exercises as could be done in the school room. Of such exercises many manuals have been written, but I will refer only to the A. B. C. of Swedish Educational Gymnastics by Hartwig Nissen, instructor in physical training in the Boston Public Schools, and one of the most enthusiastic exponents of the Swedish system of school gymnastics; and to "School Gymnastics," by Jessie H. Bancroft, director of physical training in the public schools of Brooklyn.

The Swedish free movements depend for their individuality on two vital points, exercise by command and not with music, and the "Day's Order," by which the exercises are so grouped that a definite sequence is always followed.

The groups of movements are as follows :—

1. Order movements, to form the class ready to begin the real exercises and bring them to attention in correct position.
2. Leg movements, to exercise the legs and draw the blood from the brain.
3. Arch movements, to expand and raise the chest.
4. Arm movements, to elevate chest and strengthen the spine.
5. Balance movements, for equilibrium and posture.
6. Back movements, for shoulders and back.
7. Front movements, for abdominal walls.
8. Side movements, for muscles of waist and internal abdominal organs.
9. Jumping movements, for general development.
10. Slow leg movements, to prepare the body for rest.
11. Respiratory movements, to bring the respiration and circulation back to normal and prepare the body for rest.

By varying the number and severity of the exercises in each group, the character of the day's exercise may be much changed, while the day's order is retained. The advantages are many, a universal nomenclature and the training to ready obedience not being the least.

Its chief disadvantages are the uninteresting nature of many of the

movements which are analysed or dissected till the life has gone out of them. The strain on attention is not to be commended for over-worked children, and it is very doubtful if many of the exercises given have any of the results attributed to them.

Nearly all systems of school gymnastics, however, owe a great deal to the work done by the Swedes.

Miss Bancroft makes a selection of exercises from many sources, to which she adds others found to be good in her own experience. The result is a complete graded set of schoolroom exercises that are most complete and interesting.

For out-door or gymnasium work, however, the Swedish gymnastics are not so serviceable. Here dumb-bell, bar-bell and club drills to music are valuable and interesting; work on the parallel bars, horizontal and rings, gymnastic games and marches; and for girls fancy steps, marching and games. The importance of music can hardly be over-estimated. It relieves the strain of attention, the rhythm of a waltz or march makes the exercise almost automatic and has a distinctly soothing influence on the nerves, tired and irritable from the work of the day. To do the exercises in good time becomes a pleasure instead of a strain, and the music invigorates the gymnast almost as much as the exercise. It goes so far to make the work attractive that the increased enjoyment is enough to offset the trouble it may be to get it.

To direct this work we need more training than can be expected in the Normal school, and special teachers are required who have studied the higher branches of physical training in one of the Normal schools of gymnastics, such as the excellent ones at Harvard and Chautauqua, where all departments are taught both in theory and practice. One instructor could act for more than one school, and so divide the expense.

Military drill is sometimes employed in schools, but it seems to me totally unfit for the purposes of an all-round physical training. It was not designed for that purpose, and the constrained positions and long waits, a heavy rifle dragging on the muscles of the shoulder, are not likely to improve the figure of the growing lad. Individuality and freedom of movement have to be sacrificed to the good of the Company whose unit is four, and whose integrity depends on the self-effacement of its component parts.

The question of equipment must always be a serious one, but it need not be insurmountable. The main thing is a room large and well ventilated and well heated in winter. The apparatus can come little by little, but the space is essential. Open air gymnasiums would be of value and can now be easily fitted up by special apparatus made for the purpose. Why should not the drill halls that are found in almost every

town be used as gymnasiums for the school children? They are unoccupied during the day as a rule, and could not be better employed.

The medical supervision should be such that a record could be kept of pupils throughout their course.

In the Montreal High School for boys the Rector has succeeded in introducing a partial system which has been in use for the last three years, and is now working very well. A medical examiner attends at certain hours and makes an examination of the heart, lungs and general muscular system of the boys, noting any physical peculiarity or defect. He then gives a certificate of fitness to take part in games or gymnastics, on which is marked the kind of work specially needed by the pupil. This is taken to the gymnasium director, who is thus enabled to apply the exercises that the boy most needs.

In many cases boys have been directed on the right track, who would have undoubtedly been injured by indiscriminate and undirected exercise; defects in development have been discovered that would have gone on to permanent deformity without timely advice and warning.

Among such conditions found have been palpitation, weak, irregular pulse, organic heart disease, headaches from eye defects, chronic cough and bronchitis, backache, scoliosis and flat foot, uneven shoulders, hernia and joint inflammations. In many cases the condition was unknown to the parents.

The certificate of the family physician is accepted, but as it is desired to keep a record of all such examinations, a special form is used, to be filed and kept in the High School building.

Some such system could be introduced into all schools with benefit to both teachers and pupils, but I would extend the duties of the medical supervisor to the inspection of the rooms to see that the desks and seats fit, and all other matters of school hygiene. He should be on hand for advice to teachers in cases where a pupil's dulness might depend on some defect of the senses, and the pupil referred to the family doctor for treatment.